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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,067	10/21/2003	Thomas M. Young	VAPR.05107	9329

7590 10/17/2006

Sharon R. Kantor
The Firenza Group Ltd.
65 Panorama Court
Danville, CA 94506-6154

EXAMINER	
BERTHEAUD, PETER JOHN	

ART UNIT	PAPER NUMBER
3746	

DATE MAILED: 10/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/691,067	YOUNG ET AL.	
	Examiner	Art Unit	
	Peter J. Bertheaud	3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,9-29* is/are rejected.

7)☒ Claim(s) *5-8* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5/17/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-4, 9-12, 14-17, 19, and 26-29 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3, 10, 16-18, 25, and 28 of U.S. Patent No. 6,634,864. Although the conflicting claims are

not identical, they are not patentably distinct from each other because of the following reasons:

In claims 1 and 26 of the application, the repeatedly used term "component" is broader than the term "layer" which is used in the same context in claims 1 and 16 of the patent. In claims 1, 14, and 26 of the application, the term "capillary network" can be interchanged with, and interpreted to have the same meaning as, the "capillary-sized pores" mentioned in claim 1 and 16 of the patent. In claims 2, 3, 27, and 28 of the application the phrases "non-uniform struts" and "a series of aligned channels" can be interchanged with, and interpreted to have the same meaning as, "multiple posts protruding" and "pores or channels" found in claim 2 of the patent. In claim 14 of the application, the term "seal" can be interchanged with, and interpreted to have the same meaning as, the term "coating" which used in the same context in claims 1 and 16 of the patent. In claims 9, 12, and 16 of the application, the phrases "liquid treatment component" or "liquid pretreatment component" can be interchanged with, and performs the same function as, the "porous preheat layer" as mentioned in claim 16 of the patent because they both affect the liquid prior to vaporization. In claims 14 and 26 of the application, the phrases "vapor collection component for controlled release of vapor" or "a control device to control the heat conveyed to the vaporization component, wherein the rate of vapor output is controlled" can be interchanged with, and performs the same function as, " the vaporization layer further having a thickness and area sufficient to reduce viscous drag of flowing liquid and vapor" as mentioned in claim 1 and 16 of the patent because they both control the output of the vapor. In claim 19 and 23 of the

application the "at least one liquid supply source" or "common supply source" can be accounted for by claim 1 of the patent, in which it is stated, "a vaporization layer to form vapor from liquid", meaning there must be a liquid supply source connected to the device. In claim 21 of the application the "controller...capable of individually controlling the heating of each device" can be interchanged with, and interpreted to have the same meaning as "an energy converter to generate a heat" as mentioned in claim 12 of the patent because they both control the heating of the device.

4. Claim 20 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,634,864. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following reasons:

U.S. Patent No. 6,634,864 discloses the claimed invention except for at least two of the devices of claim 1 arranged in an array. It would have been obvious to one having ordinary skill in the art at the time the invention to combine two of the devices from claim 1 in order to create a larger amount of vapor, since such a modification would amount to a mere duplication of parts. It has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8 (7th Cir. 1977). In reference to the term "array" in line 2 of the claim: an array is simply an arrangement or order of multiple objects; therefore, in this situation it is given little patentable weight due to fact that "two devices" are claimed previous to this term. By nature of there being two devices, they must be arranged or ordered in some way, thus creating an array.

5. Claim 22 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,634,864. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following reasons:

U.S. Patent No. 6,634,864 discloses the claimed invention except for a separate supply source provided to feed liquid into each device. It would have been obvious to one having ordinary skill in the art at the time the invention to have separate supply sources in order to allow for a greater amount of liquid to draw from, since such a modification would amount to a mere duplication of parts. It has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8 (7th Cir. 1977).

6. Claims 13 and 18 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,634,864 in view of Wilkinson (U.S. Patent No. 4,325,345).

U.S. Patent No. 6,634,864 discloses all the limitations substantially as claimed except for an internal combustion engine or microturbine arranged to receive vapor output.

Wilkinson teaches a gasoline fuel vaporization system (10) for internal combustion engines including a vaporization chamber (12), a housing (14), and a fuel line (17). Wilkinson further teaches an internal combustion engine arranged to receive vapor output from the vaporization chamber (see claim 1, lines 1-7) and that this would be advantageous because exposure of the fuel in the fuel air mixture is increased.

Therefore, it would have been obvious to one skilled in the art at the time of invention to modify the capillary pump of U.S. Patent No. 6,634,864 by arranging an internal combustion engine to receive vapor output, as taught by Wilkinson, in order to increase the exposure of the fuel in the fuel air mixture so as to allow for complete combustion and utilization of fuel (see col. 1, lines 51-58).

7. Claim 24 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,634,864 in view of Harvey (U.S. Patent No. 4,937,053).

U.S. Patent No. 6,634,864 discloses all the limitations substantially as claimed except for having a heater component capable of melting a solid feed to form the liquid in the supply source.

Harvey teaches a crystal growing apparatus including a crucible die assembly comprising a crucible for containing a supply of liquid source material (see claim 19, lines 7-9). Harvey further teaches a heater component capable of melting a solid feed to form the liquid in the supply source (see claim 19, lines 1-5) and that this would be advantageous because the source material is needed in liquid form in order to start the growth of a crystalline body.

Therefore, it would have been obvious to one skilled in the art at the time of invention to modify the capillary pump of U.S. Patent No. 6,634,864 by having a heater component capable of melting a solid feed to form the liquid in the supply source, as taught by Harvey, in order to get the source material in the needed liquid form to allow for the growth of a crystalline body (see col. 1, lines 25-40).

8. Claim 25 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,634,864 in view of Schladitz (U.S. Patent No. 3,869,242).

U.S. Patent No. 6,634,864 discloses all the limitations substantially as claimed except for a common vapor chamber to receive vapor released from each device and one or more orifices in the common vapor chamber providing vapor release.

Schladitz teaches a process for vaporizing fuel oil including, a porous body (1) formed as an electrical resistance heating element, a housing (10), and a mixing chamber (13). Schladitz further teaches a vapor chamber (11) to receive vapor released from the porous body and one or more orifices (12a) in the vapor chamber providing vapor release. Schladitz teaches that this would be advantageous because the vapor can be directed into a mixing chamber, to which combustion air is supplied, and then moved to a heating boiler for combustion.

Therefore, it would have been obvious to one skilled in the art at the time of invention to modify the capillary pump of U.S. Patent No. 6,634,864 by adding a vapor chamber to receive vapor released from a device and one or more orifices in the vapor chamber providing vapor release, as taught by Schladitz, in order to allow for the direction of vapor into a mixing chamber, so it can be mixed with air, and moved to a combustion chamber (see col. 2, lines 51-62).

Allowable Subject Matter

9. Claims 5-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. These references are noted in the attached form 892.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J. Bertheaud whose telephone number is (571) 272-3476. The examiner can normally be reached on M-F 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ehud Gartenberg can be reached on (571) 272-4828. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PJB

EHUD GARTENBERG
SUPERVISORY PATENT EXAMINER